

REFLECTIONS ON THE INDIAN EXCHANGE RATE REGIME¹

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India does not have a floating rate exchange rate regime, which is a regime where there is no or very little intervention by the central bank in the foreign exchange market. Neither does it have a fixed rate regime where the exchange rate is firmly fixed to a foreign currency, such as the US dollar. It has an “in between” regime where there is frequent or continuous intervention in the foreign exchange market, generally with the aim of maintaining constant the real exchange rate, but also with periods of maintaining constant the nominal exchange rate relative to the dollar, and also with occasional adjustments. In addition - and most important – in its regime the central bank has aimed to sterilize the monetary effects of its interventions. It has used monetary policy to avoid or minimise inflation, and also possibly to take into account to an extent the state of the “real”: economy, thus avoiding serious recessions.²

Here I shall analyse a simplified version of this recent (or even current) system, and compare its outcome with that of a hypothetical completely non-interventionist floating rate regime. I shall consider the case where there is substantial capital inflow into the private sector, as there has been for some years until recently in India. Under a floating rate

¹. I am indebted to comments by Vijay Joshi and particularly to three analytical articles on the Indian exchange rate and capital controls regime and policies, namely Joshi (2003), Joshi and Sanyal (2004), and Joshi (2008). I am also indebted to T.N.Srinivasan who asked some questions at my presentation that have led me to sort out and clarify my ideas further.

² Detailed descriptions of the Indian exchange rate regime since 1993 can be found in Joshi (2003, 2008).

regime such inflow would have led to substantial exchange rate appreciation while under the Indian regime the appreciation pressure has been resisted, and foreign exchange reserves have been built up.

I THE FLOATING RATE REGIME: EXOGENOUS CAPITAL INFLOW

I begin with the hypothetical case, and imagine that India has a pure floating rate regime, with no intervention by the central bank in the foreign exchange market. Monetary policy is dedicated to maintaining what I shall call (following Meade, 1951) “internal balance.” I define this as the maintenance of some balance between long-term low inflation and short-term adjustments to avoid serious recessions.³

Now there is an exogenous shock, namely a sharp increase in a particular kind of capital inflow – consisting of foreign direct investment (henceforth FDI) and portfolio flows – which will indeed disturb the economy but which is considered desirable and hence will not be controlled or even kept out. This kind of capital movement is not responsive to the relationship between domestic and foreign interest rates. I shall call this *exogenous* capital inflow. There have been two principal periods in India of substantial capital inflow of this kind, namely 1993-1995 and 2003-2007. In addition there are potential international capital movements, mainly short-term, which *are* responsive to interest rate differentials and which I shall call *endogenous*.

³ I assume that fiscal policy is simply “given” – not amenable to demand management, though monetary policy must take it into account. This is a realistic description for India.

Given this hypothetical floating rate regime, capital inflow will appreciate the exchange rate and produce a current account deficit. I assume for simplicity that there was current account imbalance initially. The current account deficit represents the resource transfer into India that is necessary if the capital inflow on its own is to have any real impact. Appreciation will reduce the relative domestic prices of tradables relative to non-tradables. Thus there will be an adverse impact on exports and import-competing industries. In common language it reduces their “competitiveness.” This adverse sectoral impact is the familiar Dutch Disease effect, and is a short-term flow effect. In addition, investment will probably increase, and hence later returns from the new investment will partly go abroad as dividends, hence tending possibly to reverse the exchange rate effect. It must be stressed at this point that the exchange rate appreciation and the current account deficit are two aspects of the same story. Appreciation is a *price* effect and the move into current account deficit is a *quantity* effect.

II THE EXCHANGE RATE INTERVENTION REGIME: INTERNAL BALANCE MAINTAINED BY STERILIZATION

The next step is to introduce the type of “in between” regime that has been practised in India. On the hypothetical floating-rate story just expounded one can superimpose intervention by the central bank in the foreign exchange market. I assume (a) that there was initial current account balance (which I already assumed above), and (b) that the intervention is designed to avoid appreciation completely. The analysis can readily be extended to the case where initially there is positive or negative initial capital inflow (and hence some current account imbalance initially), and where the

appreciation effect of the exogenous capital inflow is moderated rather than avoided completely⁴.

When the capital comes in the central bank now buys the foreign exchange brought into the country and invests it abroad, adding it to its liquid reserves. Let us now think of reserves accumulation as a form of capital outflow. When this increase in reserves is combined with the exogenous capital inflow which has started our story there is then no *net* capital inflow. Hence there will now be no appreciation and no change in the current account. Thus there will be no resource transfer. Dutch Disease effects will be avoided. Indeed that may be the reason for the intervention. In particular, adverse effects on export industries will be avoided.

What about internal balance? Capital inflow leads to extra domestic spending. This is financed by the domestic currency value of the inflow (which equals the extra foreign exchange reserves). A current account deficit would allow spending to exceed output. But since there is no longer a current account deficit, there must therefore be an offsetting reduction in demand if internal balance is to be maintained. The demand reduction will be brought about by sterilization of the monetary effects of the exchange rate intervention. In other words, the extra domestic money supply resulting from the intervention will be offset by the central bank's open market operations (sale of bonds) that raise the interest rate, and so generate an offsetting reduction in spending, whether on consumption or investment. This offsetting reduction in spending will be equal to the build-up in foreign exchange reserves. The objective is thus to maintain internal balance even though the exogenous capital inflow has, in itself, increased spending.

⁴ At this point and elsewhere I may seem to be confusing nominal and real appreciation. Just to simplify the story a little I am assuming that "internal balance" maintains a rate of domestic inflation equal to that of trading partners, so that the two concepts converge – i.e. any nominal appreciation also leads to equal real appreciation, and thus that zero real appreciation is obtained by a policy aimed at zero nominal appreciation.

III CAPITAL CONTROLS

Now we must take into account *endogenous* capital inflow, as distinct from the exogenous capital inflow that started off the story. If the higher interest rate brought about by sterilization led to more capital inflow – as it would if there were international capital mobility without controls – the purpose of sterilization would be defeated. As I noted earlier, I call this *endogenous* capital inflow because it is responsive to relative interest rates. Thus, this interventionist policy combined with sterilization requires capital controls in order to prevent endogenous capital inflow that would prevent (or moderate) the necessary rise in the domestic interest rate⁵. Therefore exogenous capital inflow in the form of FDI or portfolio capital would be permitted, but not short-term inflows that are responsive to interest rate differentials.⁶

It follows that such capital controls make possible the combination of an explicit exchange rate intervention policy aimed to achieve an exchange rate target and a monetary policy that aims at internal balance. In other words, two parts of the “impossible trinity” become compatible. The condition is that the third part, namely complete freedom of capital mobility, is given up⁷.

⁵ In the floating rate case endogenous capital movements, resulting from a higher domestic interest rate would lead, if uncontrolled, to further appreciation of the exchange rate.

⁶ Here I should insert a qualification. Even in the absence of controls on capital movements some rise in the domestic interest rate may be possible as a result of sterilization because of an increase in the risk premium resulting from the sale of Indian government bonds by the central bank. As the quantity of such bonds builds up in the market as a result of continuous sterilization the demand in the world market to hold even more will decline. Endogenous capital inflows will then be self-limiting. Hence the domestic interest rate would eventually have to rise even in the absence of capital controls. But capital controls are necessary for the effectiveness of sterilization as long as the substitutability of Indian government bonds for foreign bonds is high.

⁷ The Indian system of capital controls is described in Joshi (2003, 2008). It should be noted that Joshi supports the continuance of controls on short term capital movements not only for the reason given here (making sterilization possible) but also for the purpose of removing a major source of instability of the balance of payments and hence of the exchange rate (or the need for intervention) because of the volatility of such capital movements. It is a way of reducing crises.

The necessary reduction in spending that is brought about in this story by a higher interest rate could also be brought about in two other ways. Reserve requirements of banks with the central bank could be increased appropriately – thus imposing a cost on banks. This is a common feature of sterilization policies. There might also be direct restriction on bank credit. Alternatively a budget deficit could be reduced to the necessary amount, or a surplus increased. In that case the bonds sold by the central bank in the sterilization process would be bought (and retired) by the government. All these are ways of bringing domestic spending down to the limits set by the need to maintain internal balance.

IV EXCHANGE RATE PROTECTION AND THE REAL TARGETS APPROACH

In Corden (2002) I list three possible motives or “approaches” for exchange rate policy: the *nominal anchor approach*, the *real targets approach* and the *exchange rate stability approach*. The objective of the first is to provide an external anchor for the inflation rate. But in the Indian case this is not really needed because there is a strong aversion to inflation, an aversion that has deep historical roots (Joshi, 2003). It is not necessary to tie the value of the rupee to the exchange rate of a low-inflation country or grouping (like the dollar or the Euro). But the second motive (real targets approach) and the third motive (exchange rate stability approach) are indeed relevant for India.

Let me begin with the “*real targets*” approach. The possible aim of policy may be to target the real exchange rate by influencing the nominal exchange rate for the sake of maintaining the “competitiveness” of Indian export industry. The aim would be to avoid or minimise the Dutch Disease. There is some indication that this has been one motive in Indian policy. It is really a form of protection – favouring in this case producers of tradables, principally actual or

potential export producers, relative to producers of non-tradables. I have called it earlier “exchange rate protection”(Corden, 1985).

The principal rationale may be some kind of infant industry argument for protection of exporters. I have in mind here the popular case for “export-led growth” in developing countries. This argument with respect to India is advanced in Joshi (2008). Incidentally, it is probably also an underlying rationale for China’s exchange rate policy. Of course, this kind of policy also favours import-competing producers, so it is really a second-best policy if the intention is just to favour exporters⁸. In assessing this, many of the familiar issues discussed in the theory of protection arise (see Corden, 1997, Chapter 8 on infant industry protection). Particularly relevant is the role of learning by exporters to get to know new international markets, and methods of production and marketing to sell to those markets. The key question arises: to what extent is there an “externality” element? While I have considerable doubts (as laid out in Corden, 1997), I will grant here the soundness of the argument, at least in justifying protection for a limited period of a category of potential exporting industries relative to other industries.

V THE GAINS AND LOSSES FROM INTERVENTION: PRICE AND QUANTITY EFFECTS

Let us now consider the gains and losses from exchange rate intervention motivated by this real targets approach. I am now comparing the exchange rate intervention equilibrium practised in India with the hypothetical non-intervention (floating rate) equilibrium. In both cases there is the exogenous capital inflow (in the form of FDI and portfolio capital) that starts the process. The intervention equilibrium

⁸ Hence there is a case for further trade liberalization combined with appropriate real depreciation, in preference for real depreciation on its own that leads to a current account surplus.

yields the possible gain from the particular version of the infant-industry argument for protection, just mentioned. In addition, in the intervention equilibrium there is a gain from the accumulation of foreign exchange reserves to be set against a loss from the reduction of domestic spending resulting from the higher interest rate (or tightened fiscal policy).

I have already drawn attention to the distinction between *price* effects and *quantity* effects. When it comes to exchange rate intervention, the main point to bear in mind is that the intervention itself is a relative *price* intervention, but it has inevitable *quantity* effects. The real exchange rate (which the intervention aims to affect) is a price, but the current account balance, which will be affected by the policy, is a quantity. Similarly, the accumulation of foreign exchange reserves and the reduction of domestic spending brought about by the higher domestic interest rate, are quantities. One must allow for the gains and losses from the quantity effects. Even if the “protectionist” motive is sound from a national-interest point of view (which is a matter for debate, but which I will grant here) the gains and losses from the quantity effects cannot be ignored.

The rate of return on foreign exchange reserves is usually low, while the foregone benefits from reduced domestic spending can be measured by the domestic interest rate, which is usually higher. The latter may involve primarily a reduction in domestic investment spending, in which case one should weigh the return on foreign assets that make up the additional foreign exchange reserves against the potential return on the foregone domestic assets. It all depends on the kind of domestic investment foregone. Possibly the net cost would be high, especially if the interventionist policy is prolonged.

It is well known that exchange rate intervention of the kind discussed here - which involves a central bank accumulating foreign exchange reserves and then sterilizing the monetary effects - will cause the central bank to incur losses which give rise to what is called a *quasi-fiscal* deficit. It receives a low return on its foreign exchange reserves, and pays a higher interest rate on securities sold domestically. This adverse fiscal effect sets a limit to intervention that is designed to avoid appreciation of the exchange rate. (Similarly, the limit to intervention which is designed to avoid or moderate depreciation is set by the availability of foreign exchange reserves), In fact, this *quasi-fiscal* problem is simply a manifestation of the general point made above, namely that returns on foreign exchange reserves are usually less than the cost to the central bank of borrowing domestically, or of foregoing income from government bonds that now have to be sold in order to sterilize the monetary effects of the foreign exchange intervention.

One must introduce another gain from foreign exchange reserves, much more important than the actual rate of return. This is the liquidity gain. The rate of return is usually low only because the central bank invests in highly liquid assets. The aim of the intervention may be not to achieve a real target (in the form of a particular real exchange rate), but to build up foreign exchange reserves so as to avoid crises and stabilize the exchange rate. In other words the motive may be given by the third of the three possible motives for exchange rate policy listed earlier, namely the “*exchange rate stability approach*”. On the probability that exogenous capital inflow may decline or even turn into outflow at some time in the future, or that the terms of trade may deteriorate and hence give rise to a current account deficit, foreign exchange reserves may at a later date fulfil their primary role of stabilizing the real exchange rate and domestic spending.

Indeed the recent turn-around in the Indian balance of payments owing to the increases in world oil and food prices provides the opportunity for foreign exchange reserves to fulfil their stabilizing role. Taking this liquidity role into account the true rate of return on foreign exchange reserves is much higher than indicated by the interest income received. At the same time it must be borne in mind that if a long-term “real targets approach” aimed at a real exchange rate target were followed the build up of reserves might indeed become excessive from a liquidity point of view. This may describe the current Chinese situation.

Before summarizing the policy conclusion, one should note the broader application of this discussion. I have presented here a detailed analysis of exchange rate intervention that is a response to a surge or, at least, increase in exogenous capital inflow into the private sector. The central theme has been that if such inflow leads to extra spending domestically, and if there were *no* exchange rate intervention, it would appreciate the real exchange rate and thus have Dutch Disease effects – i.e. adverse effects on sectors producing tradables. If it did not lead to extra spending on non-tradables there would be no such effects. Now, it should be noted that the analysis can be applied more broadly, and not just to intervention that is motivated by the Dutch Disease effects of capital inflow into the private sector. These broader applications are relevant for India.

Firstly, capital inflow into the public sector will have similar effects provided, again, that the funds borrowed internationally by the public sector are actually spent domestically. Secondly, increases in remittances from Indians working abroad and spent on (broadly) nontradable goods and services in India will have the same effects. Thus, increases in the oil price leading to higher remittances from the Middle East might have Dutch Disease effects in India, and thus –to moderate or avoid such effects – might provoke exchange rate intervention. Finally, booms in particular export sectors are likely to have this effect.

Indeed the original Dutch Disease theories were developed in response to booms in resource exporting sectors, especially the oil sector. In the case of India the booming sector has been the services and IT sector. This is very well known.

To summarise the policy conclusion, an assessment of an exchange rate intervention policy aimed at maintaining or achieving a real exchange rate when there is an exogenous capital inflow or similar shock involves a complex cost-benefit exercise. While the intervention is a price intervention, a cost benefit analysis must also take into account the *quantity* effects.

First, there is an assessment of the familiar infant industry argument for protection of export industries based on the “export-led growth” ideas. This is subject to qualifications that apply to many arguments for protection. Second, there is an assessment of the gains and losses from the quantity effects, namely from the accumulation of foreign exchange reserves relative to greater domestic consumption or investment. In this calculation the liquidity gains from reserves accumulation must be taken into account. But one point is clear. Once reserves accumulation goes well beyond providing for likely liquidity needs, the costs of an exchange rate intervention policy that is designed to depreciate the real exchange rate below its long-term floating rate equilibrium must eventually outweigh the benefits. Of course, it might be a sensible policy for several years.

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